

III. Regional Mapping and Recommendations

The process of inventory and analysis for the nine individual towns produced a set of maps for each community, as described in the previous section. These were compiled into a set of county-wide maps, organized along the same lines into the three resource themes. With review by participants in the regional workshops, regional priority maps were prepared to show the key resource areas and corridors for each of the resource types. Finally, a regional composite map was prepared, to identify those areas with a unique combination of resources.

Protection Targets

The diverse collection of groups and agencies involved in open space conservation in South County will, of necessity, continue to pursue their individual goals and objectives. It is hoped, however, that by focusing on the shared goals that have been identified by this project, these groups can work together to shape a permanent open space network for South County. The following **protection targets** have been identified over the course of the project as the most important to realizing this overall goal. They represent a compilation of what the team heard from town committees at the local workshops, recommendations that came out of the regional conferences, and interviews with key stakeholders.

With the broad spectrum of groups involved, it is impossible to claim that one target is the most important, so they are divided into separate targets and strategies for natural, cultural,

and recreational resources. These are listed following the inventory and priorities maps for each of the resource types. Additional maps are included to clarify the location of resources such as farmland, forests and water supplies, that are not often seen from a regional perspective.

The following regional maps are described in this section:

1. Inventory of Natural Resources
2. Biodiversity Priorities
3. Borderland Forest, Queen River Watershed and Coastal Pond Initiatives
4. Farmland
5. Aquifers, Recharge Areas, and Wellhead Protection Areas
6. Status of Water Supply Protection
7. Natural Resource Priority Areas and Corridors
8. Natural Resource Priorities With Protected Lands
9. Inventory of Cultural Resources
10. Cultural Resource Priorities
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13. Recreation Resource Targets
14. Composite Resource Priorities
15. Composite Priorities With Protected Land
16. Landscape Preservation Focus Areas

Landscape Preservation Focus Areas

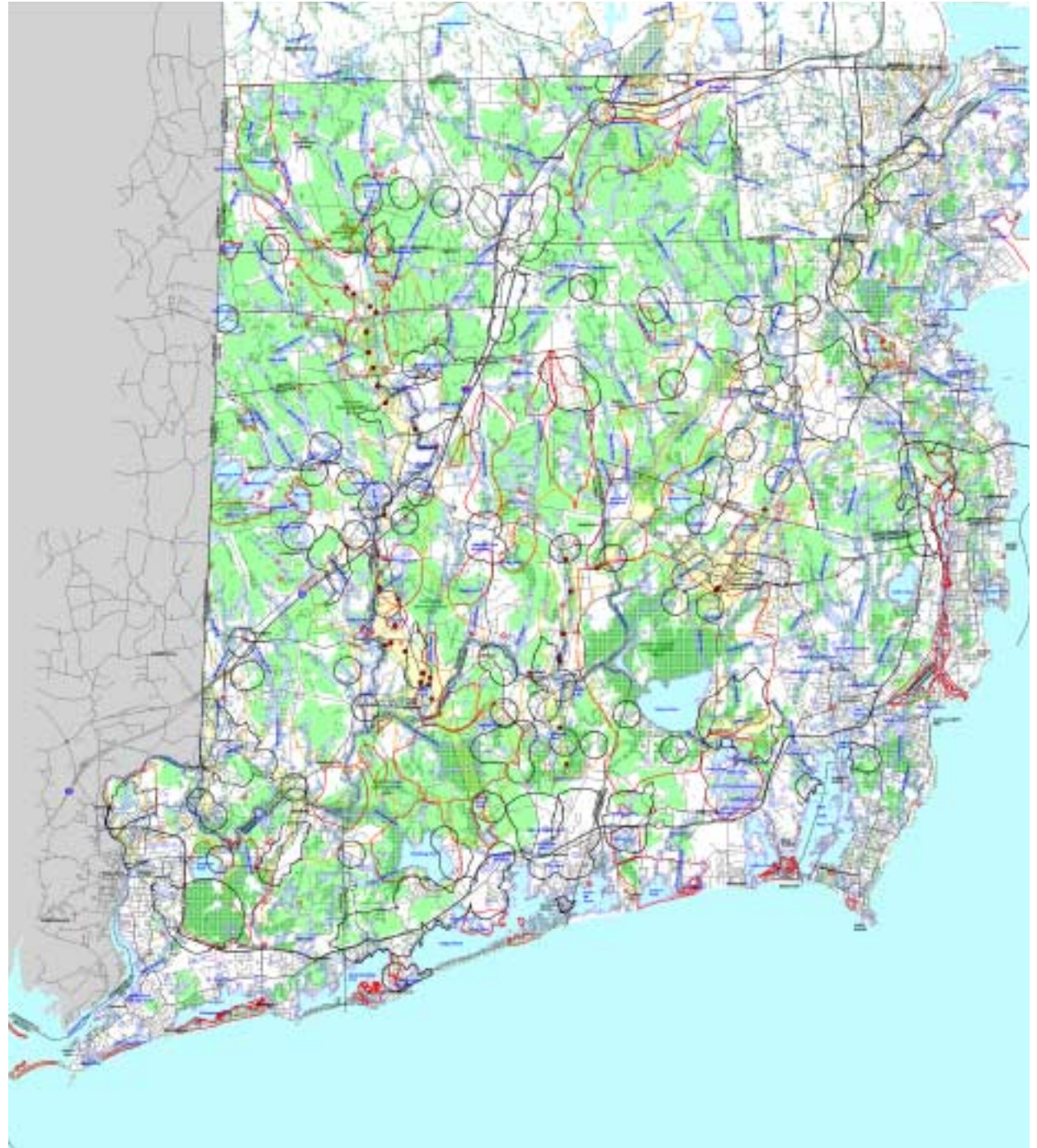
The separate actions of the various conservation groups, towns, and government agencies in protecting and managing open space resources have been and will continue to be the foundation of open space conservation in South County. However, the study showed that in each town there are areas that are significant, not because of any one resource, but as a result of a unique combination of natural beauty, historic and cultural value, and recreational opportunity. These areas, unfortunately, are sometimes overlooked by conservation groups because they lack resources that “score highly” in any single category. Yet these are often the very landscapes that produce the special visual character and quality of life that draw people to South County.

As described below, these important South County landscapes were identified by overlaying the three resource priority maps to create a single composite map of natural, cultural and recreational priorities. Using this map, eleven key areas of the county were identified for further study.

Inventory of Natural Resources

Natural resources of the greatest interest and potential value to local residents were identified through the work of the local committees in each community, working primarily with data available on RIGIS. Several themes emerged as having critical value: biodiversity, farmland and water supply. In consultation with local ecologists, The Nature Conservancy, and state biologists, it was determined that critical biodiversity resources could be identified by mapping riparian corridors, large forest blocks, wetlands, and documented rare species habitats. A 300 foot buffer of waterbodies (violet) shows the riparian corridors; large forest blocks (green) were digitized from the RIGIS 1:5000 orthophoto set; wetlands (green dot screen) and habitats (red dot screen) are as mapped by RIGIS. Water supply was identified by showing the aquifers (yellow) and aquifer recharge areas (orange boundary line) from RIGIS. Wellhead protection areas (black) were also from RIGIS.

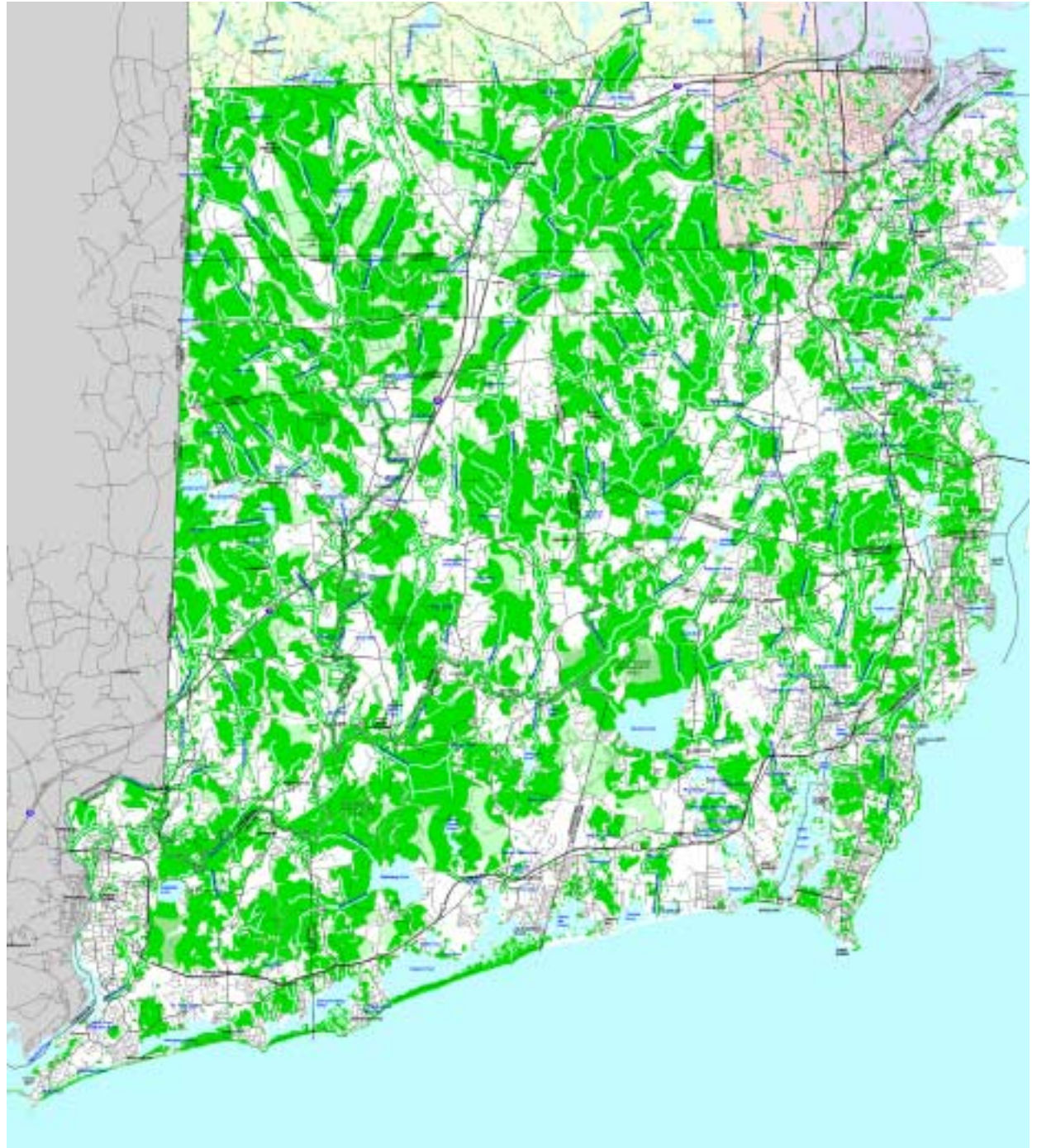
The complexity of the resulting map demonstrates the way South County is shot through with natural diversity -- in fact it might be easier to find places that are not important for natural resources than the opposite. The maps on the following pages break down these natural resources into separate categories of biodiversity, farmland, and water supply. A final composite shows how they may be grouped into a single map of priority natural resource areas and corridors.



Biodiversity Priorities

Biodiversity refers to naturally-occurring, interdependent communities of plants and animals and the landscape that supports them. In mapping biodiversity, each town sought to identify both the areas containing important species and the network of forest, wetlands, waterbodies and streams that provides them food and shelter -- in short, the ecosystems which must be preserved if these natural communities are to survive. These areas were divided into “core” and “supporting” biodiversity resources.

Core Biodiversity Resources (dark green) include the 300’ riparian corridors, and areas of forest, wetland, or habitat that lie within 2000’ of these corridors. Supporting biodiversity resources (light greens) include the remaining areas of large forest blocks, wetlands, and rare species habitat that are not near waterbodies. These setbacks are, of course, somewhat arbitrary, but help to show the larger pattern of biodiversity values across the county, which by every account is closely tied to water bodies and riparian corridors.

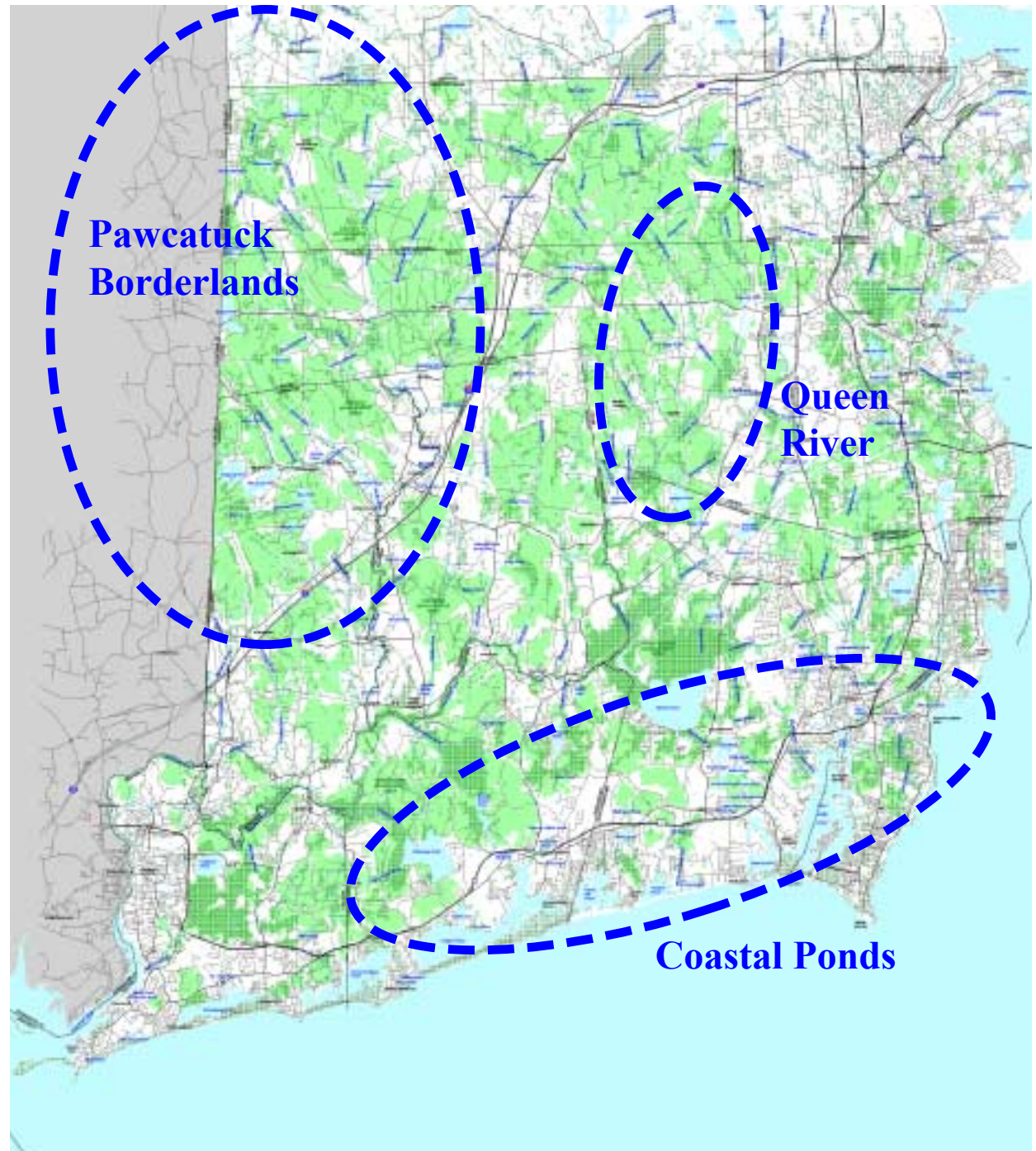


The Borderland Forest, Queen River Watershed, and Coastal Ponds Initiatives

As shown on the previous map, South County is rich in biodiversity. What is less obvious is how unusual this richness is within the larger context of the Northeastern United States. As shown on this map of forests (green) and wetlands (dark green hatching), several state and national conservation groups are pursuing conservation initiatives to protect these regional resources. The Nature Conservancy, for example, has identified the 200-square-mile forested area straddling the Rhode Island/Connecticut border as one of the largest blocks of woodland remaining on the Northeastern Seaboard. Their “Pawcatuck Borderlands Project” seeks to encourage public and private conservation efforts throughout this area.

The Rhode Island Audubon Society, meanwhile, is focussing its efforts in South County on another special area, the Queen River. Having protected much of the river’s main stem in Exeter, they are gradually expanding the area of conservation land along its tributaries.

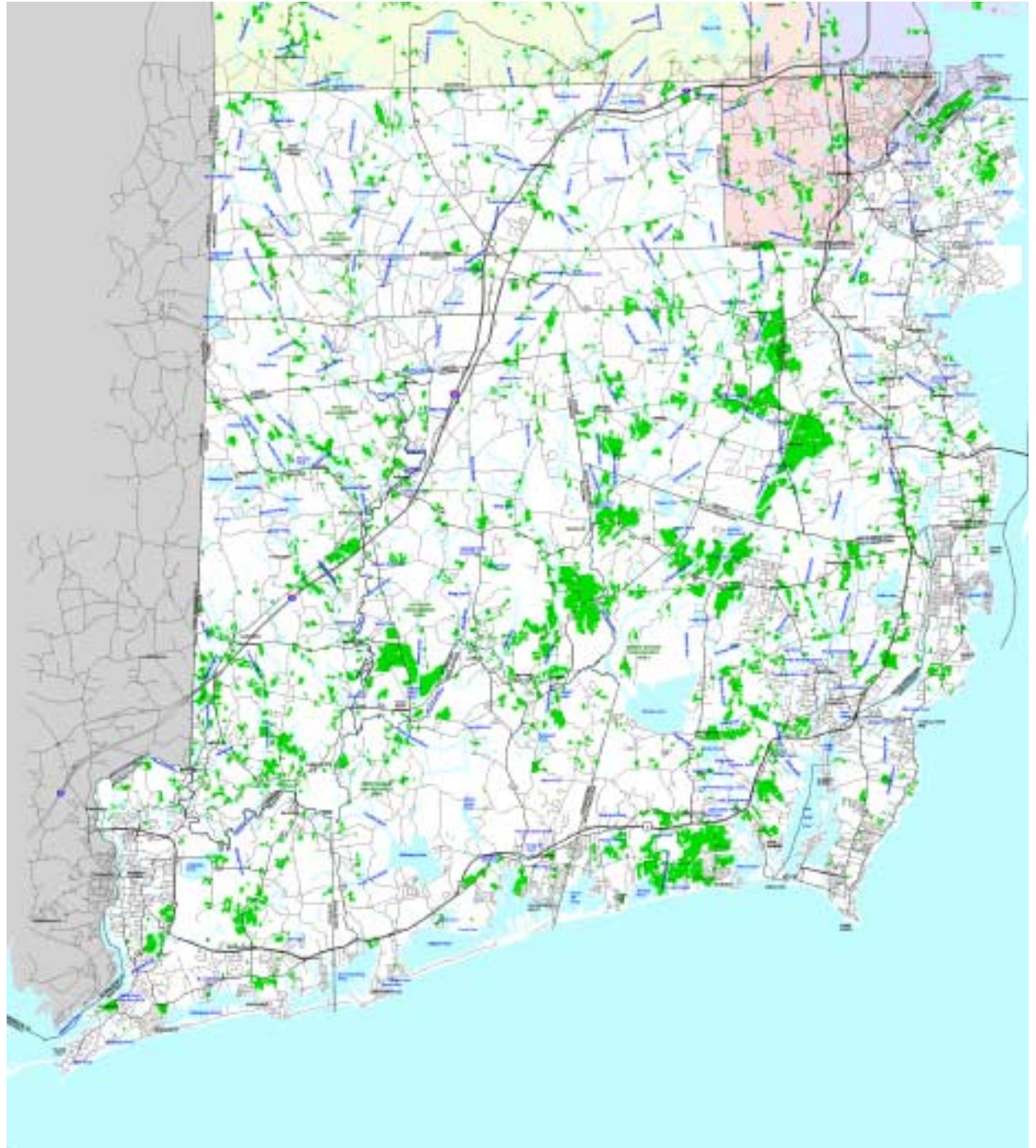
Along the coast, the U.S. Fish and Wildlife Service is working to expand a network of five refuges that protect the watersheds of the fresh and saltwater ponds from Burlingame to the Narrow River.



Farmland

South County contains the largest contiguous areas of farmland in Rhode Island. As shown on the map at right, the most extensive of these are found in a belt running diagonally across the center of the county north of the Pawcatuck river, from Hopkinton to North Kingstown. Another large agricultural area may be found in Perryville and Matunuck, in South Kingstown. This pattern is a direct result of the geological history of the region. The best soils were deposited where the streams that drain the hilly Northwestern corner of the county meet the lowlands of the Pawcatuck River.

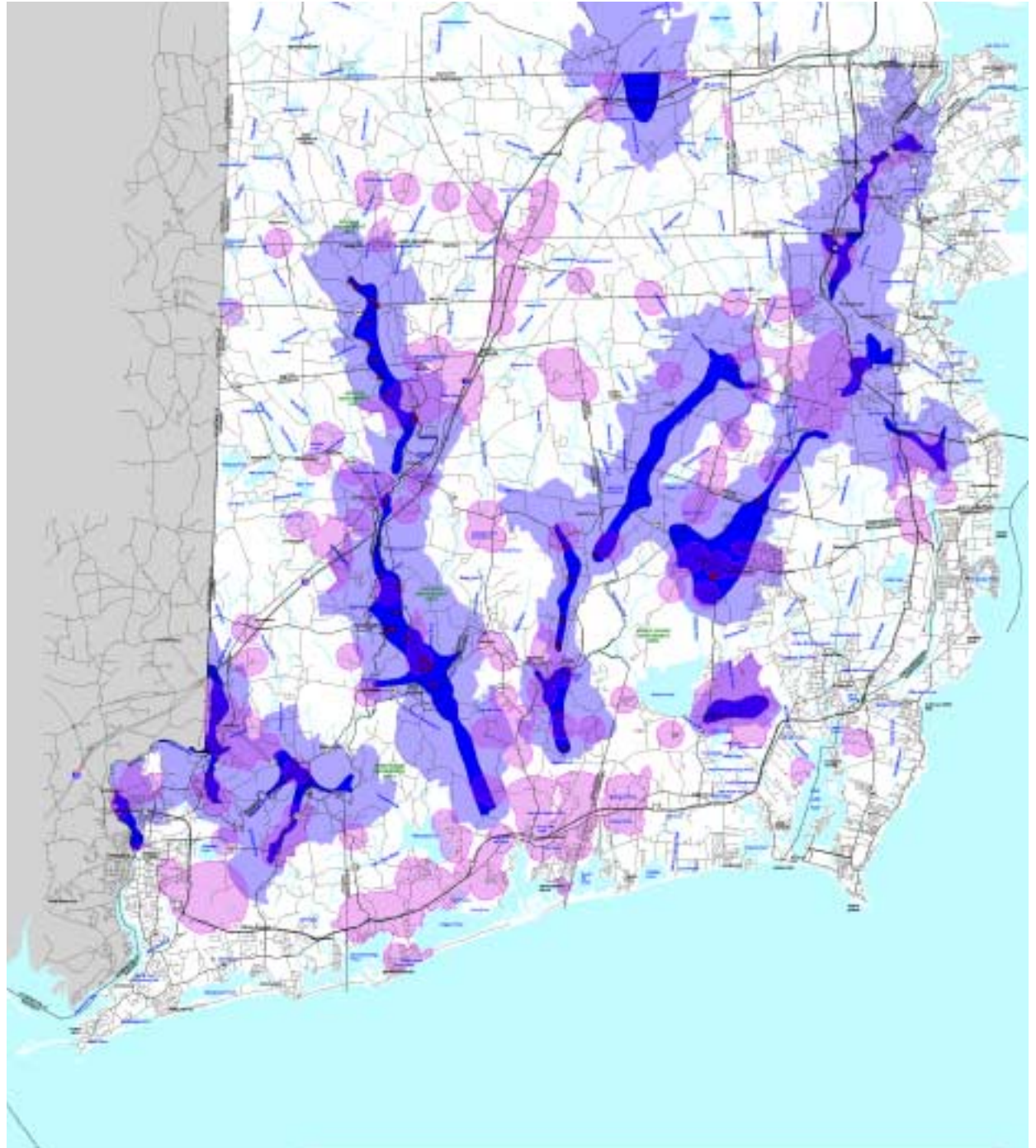
These areas were important to the early history of the area, which was dominated by large plantations unique in New England. Later, they supported potato farms, and more recently, sod farming and nursery crops. Throughout the rest of South County, farmland is scattered among hundreds of smaller areas, mostly along narrow stream valleys. These once supported a local dairy industry, which as given way to a mixture of hay, fruit crops, and vegetables.



Groundwater Reservoirs, Recharge Areas and Wellhead Protection Areas

With the exception of the coastal plain south and east of Route 1, virtually all of South County has been designated a sole-source aquifer by the U.S. Environmental Protection Agency. Within this area there are groundwater resources of critical importance to each community. Shown in dark blue on this map, groundwater reservoirs contain the highest potential yield of drinking water. Surrounding these are the groundwater recharge areas (light blue), which include the surface lands that drain into the groundwater reservoirs.

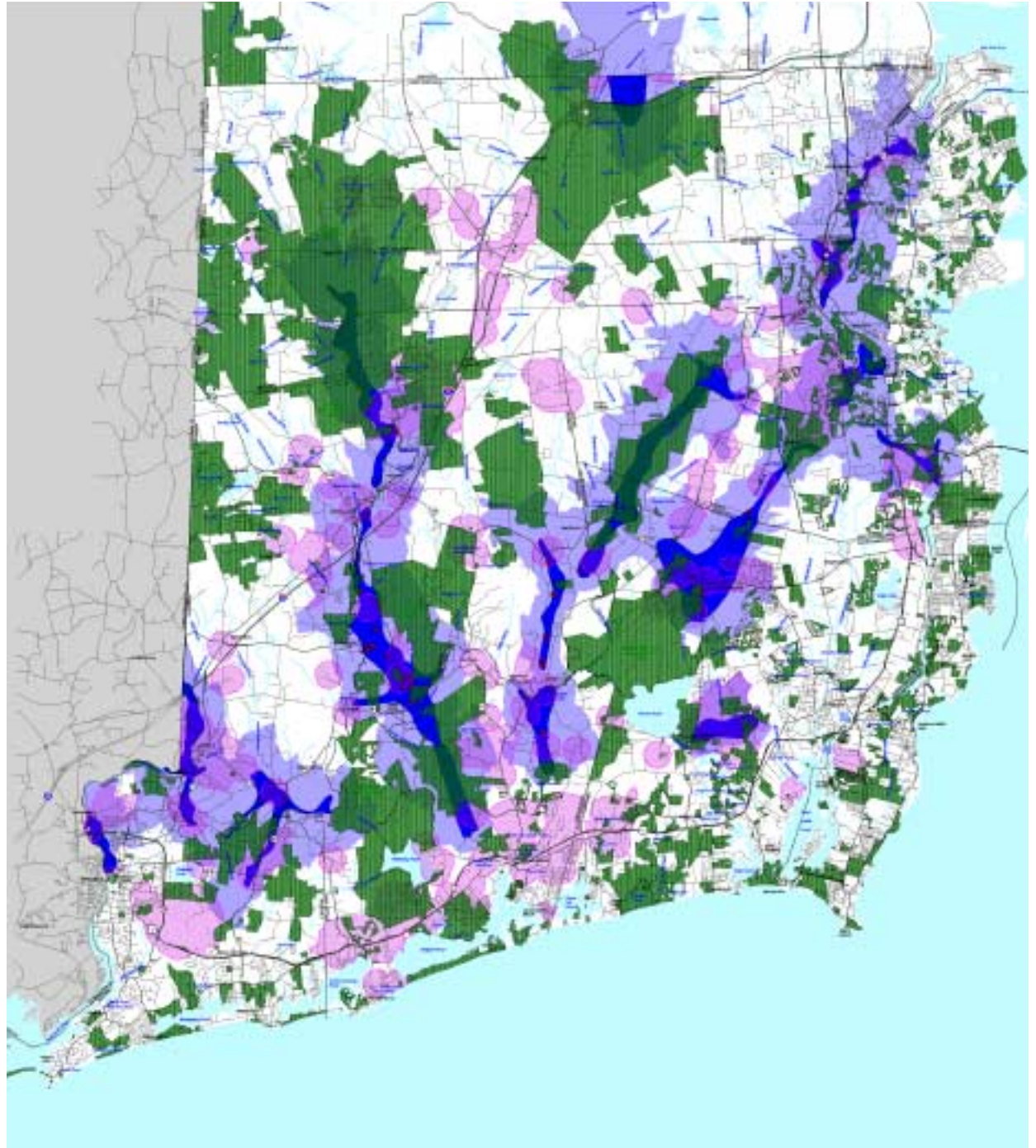
There are thousands of individual household wells scattered throughout the county. The state places particular importance on wells that serve businesses or multiple connections. “Community wells” include those that serve 25 people or 15 connections year-round; “non-community wells” serve 25 people at least 60 days out of the year. In both cases, the state has designated an area around each of these shared wells as a wellhead protection area (purple cross-hatching). These wellhead protection areas are considered critical for the protection of each well’s source water supply.



The Status of Water Supply Protection in South County

The protection of drinking water is the most important natural resource protection target for the South County communities. The U.S. Environmental Protection Agency has designated two aquifers, the Pawcatuck and the Hunt-Annaquatucket-Pettaquamscutt (HAP), as sole source aquifers because they are the only sources of drinking water for an area that encompasses virtually the entire South County Region. At the local level, the greenspace workgroups quickly reached consensus that it is a priority to protect the region's water supplies. The most critical portions of the aquifers to protect are the ground water reservoirs (dark blue). These areas contain the highest yield of drinking water and are hydrologically linked to surface waters. Protection of ground water reservoirs also helps to protect surface waters, riparian habitat and to form continuous links of protected areas through communities and the region. As can be seen on this map overlaying protected land (green), however, many of the ground water reservoirs are not yet protected.

All of the communities in the project area have adopted some form of *groundwater protection overlay district* in the local zoning regulations. On the state level, the Rhode Island Department of Health – Source Water Assessment Program evaluates land use and potential drinking water quality threats around public drinking water supplies. Meanwhile, the Rhode Island Water Resources Board works with major water suppliers to protect drinking water supplies under the State's Watershed Protection Program.

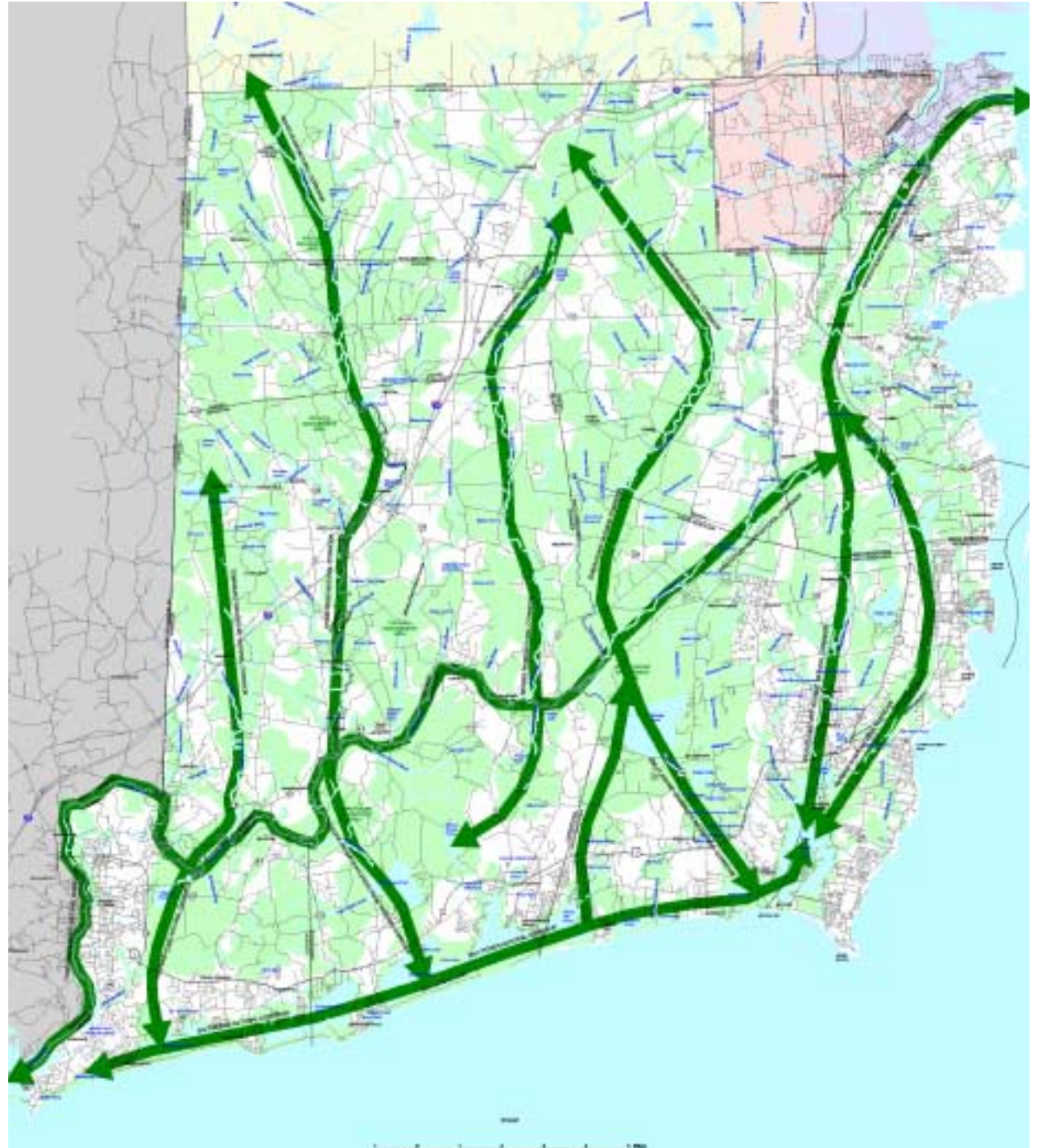


South County Greenspace Protection Strategy

Natural Resource Priority Areas and Corridors

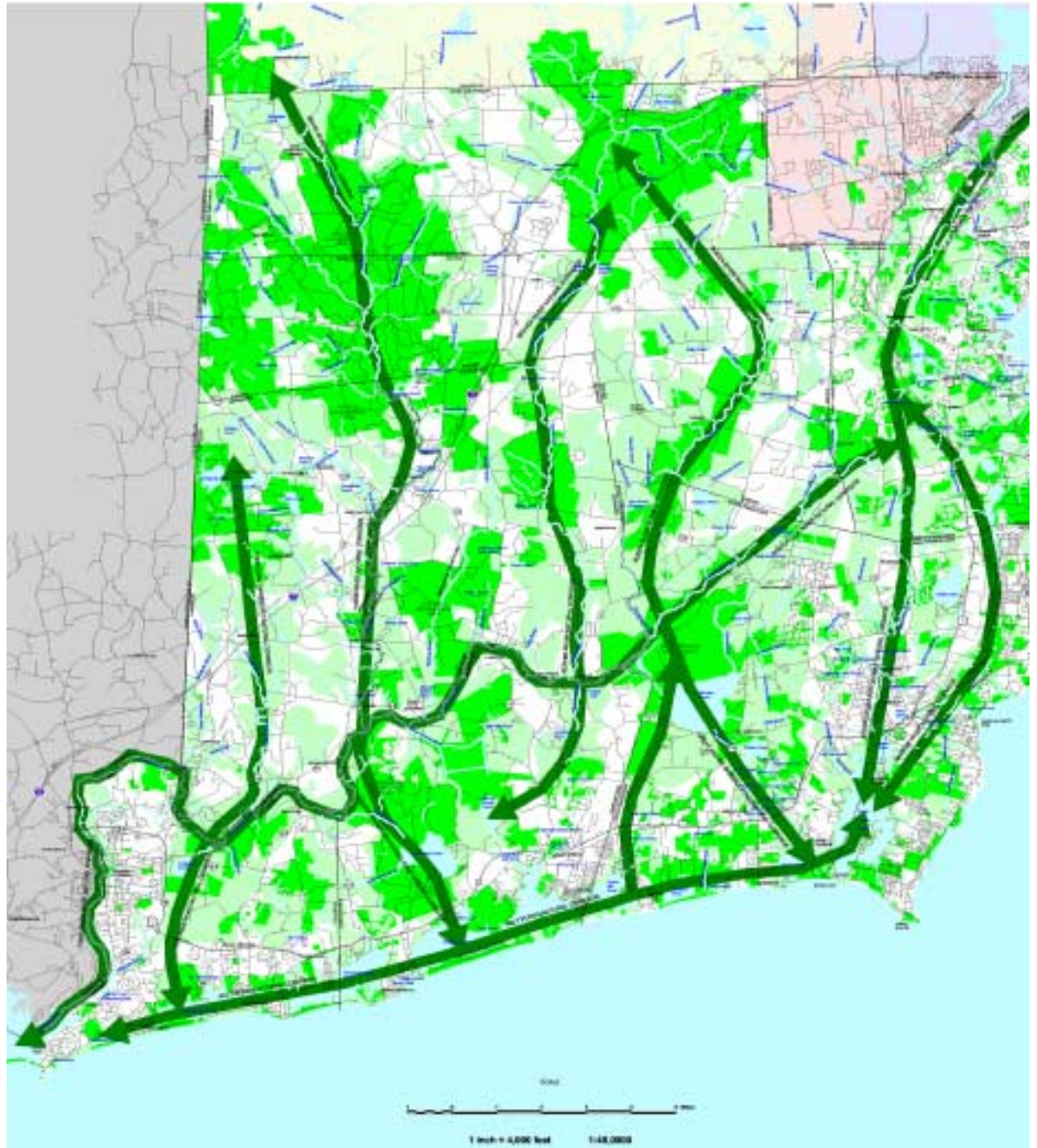
While virtually all of the county is, to some extent, important for either biodiversity or water supply, in order to make decisions for conservation and management it is necessary to group resources according to their relative value. While each town, state agency, and private conservation group has its own standards for setting priorities, this map shows one approach to defining relative values based on features shown on the previous maps.

The light green areas represent the core biodiversity zones, combined with areas most important for water supply and farmland. The dark green arrows show the corridors that tie the system together into a functioning whole. These corridors, for the most part, follow the river and wetland systems. These forested riparian corridors are critical, not only as habitat for many species of animals, but for protection of water supply. The most important of these are the Pawcatuck and its tributaries, particularly the Tomoquag, Wood, Beaver and Queen Rivers; as well as the Saugatucket, Narrow and Potowomut Rivers. Another important corridor connects the salt ponds along the coast.



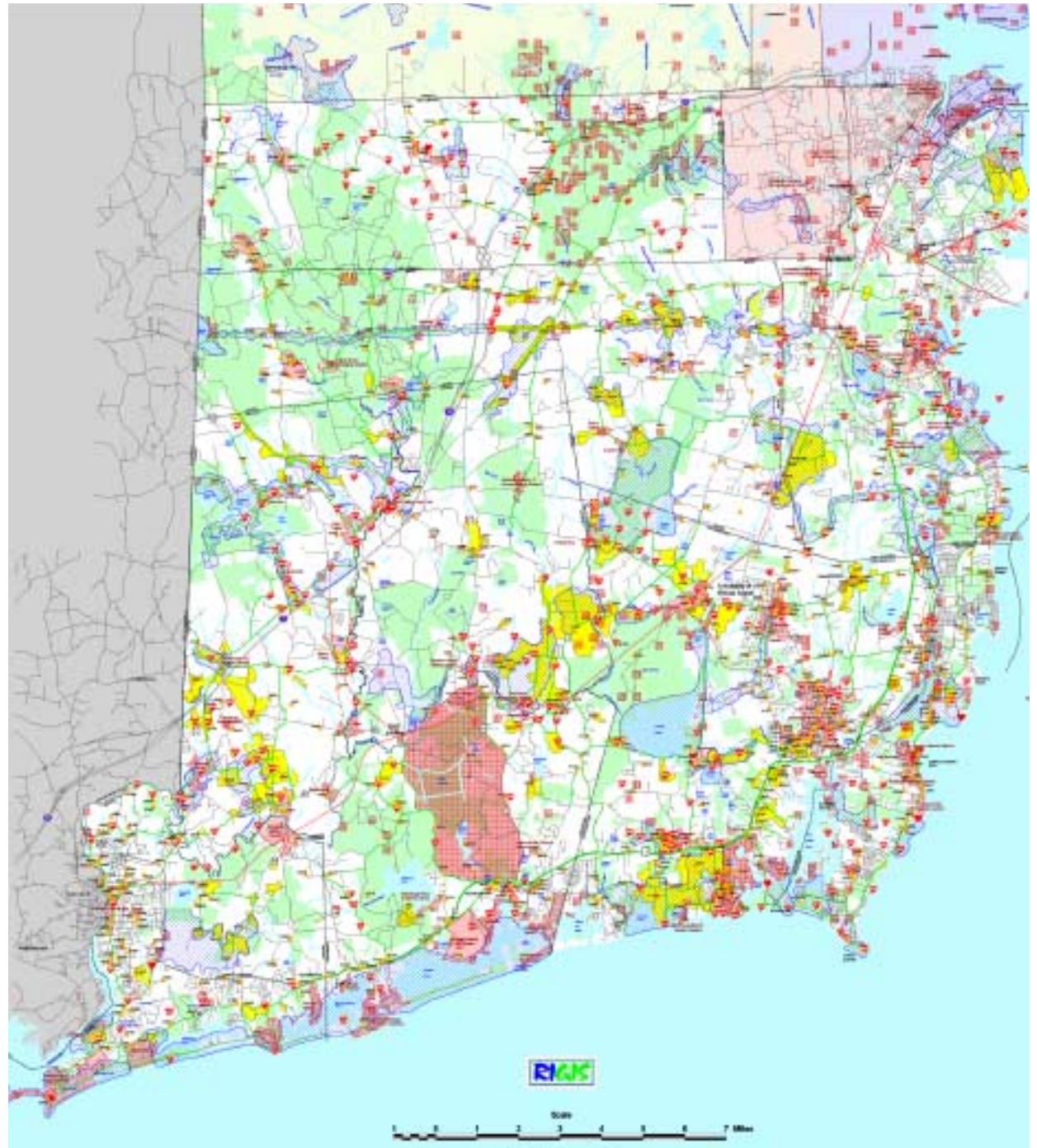
Natural Resource Priorities with Protected Lands

Overlaying the natural resource priorities (light green) with areas that have already been preserved (dark green) reveals gaps in the “connective tissue” of a potential future network of natural resource protection. This demonstrates the pattern of previous conservation efforts, which have been effective in consolidating large blocks of forest in the Western part of the county, with many smaller preserved parcels in the Eastern towns. While the core of many of the largest riparian forest areas have been preserved, most are surrounded by thousands of acres of similarly valuable, but unprotected, land which drains directly into them. Areas of greatest concern based on this analysis include the Tomoquag Valley in Hopkinton, the lower reaches of the Wood River, the Beaver River in Richmond, and the headwaters of the Saugatucket, Narrow, and Poto-womut Rivers in North Kingstown. Another good example is the Queen River basin, (inset), where the main stem has been protected but most of the river’s tributaries are not.



Inventory of Cultural Resources

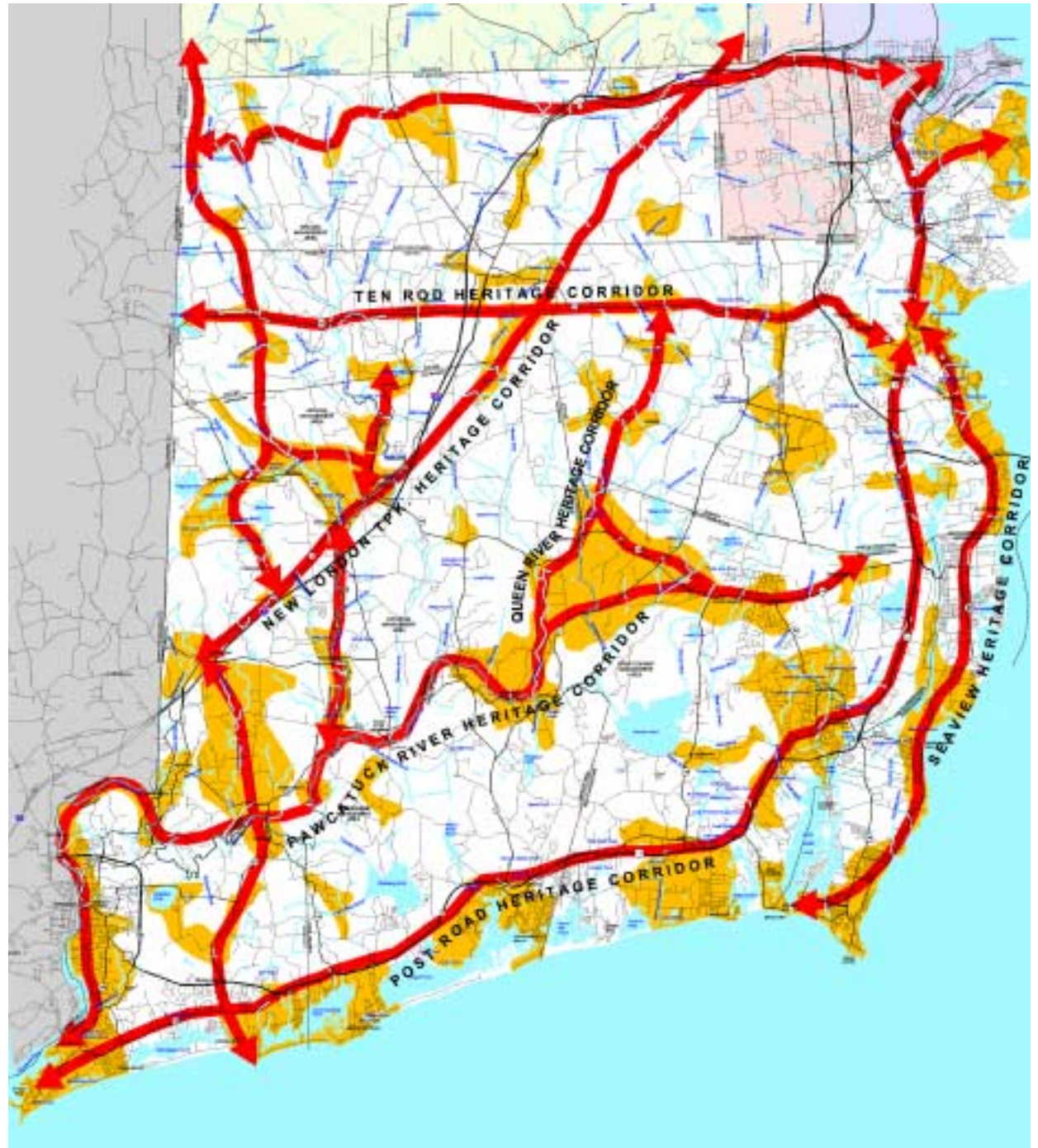
Three types of cultural resources were inventoried and assessed. Each of these shares the common element of being important to the history, present lifestyle, or future livability of South County. The first category includes historic sites, which were digitized from local inventories of historic and architectural resources prepared by the Rhode Island Historic Preservation Commission; archaeological sites mapped by RIGIS; and additional historic data mapped by volunteers in each community. Another type of historic element are heritage landscapes, which represent traditional agricultural or mill landscapes that have the potential to serve as “living museums” of South County’s working landscapes. The second group includes scenic resources, which were compiled from the Rhode Island Landscape Inventory (RIDEM, 1990); from the state Inventory of Scenic Roadways (Rhode Island Scenic Roadways Board, 1996); and locally identified scenic roads and scenic areas. The third type of cultural resources were “special places,” which are meant to include locations in each town that are important to the daily life or character of the community. These were identified by the local volunteer committees, and represented by the red hearts on the maps, since they are “places in the heart.” Each of these cultural resources were placed on the map shown here, and overlaid with lands that have already been protected. The result illustrates how few of these important cultural resource areas have been preserved.



Cultural Resource Priorities

Based on the initial inventory of cultural resources, areas with a high concentration of valuable elements were grouped into “heritage areas.” Each of these areas represents a special combination of cultural resources: traditional agricultural landscapes; historic villages, farmsteads and mill sites; scenic corridors; and special places that are important to local residents. As shown on this map of Cultural Resource Priorities, these resources tend to follow other landscape elements, which might be natural features such as the Pawcatuck River or salt ponds, or cultural features like historic highway or rail corridors. What this map suggests is that by protecting a relatively limited number of key corridors, we can preserve the cultural landscapes that give South County its unique visual character and quality of life.

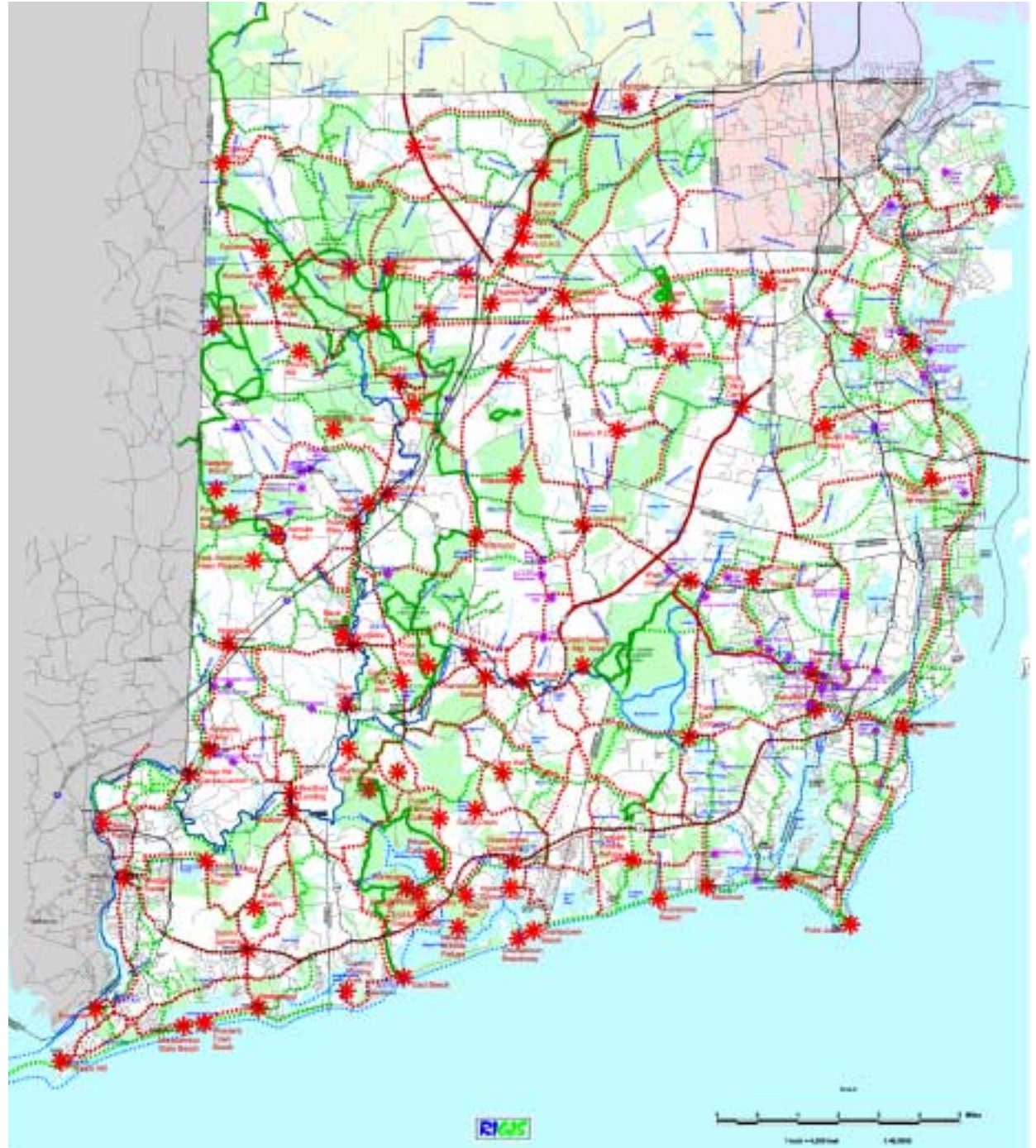
Specific targets include **Preserving and Enhancing the Village Centers of Kenyon, Shannock, Carolina, etc.** The historic village centers of the region are showpieces in what some may call the, ‘Living Museum of South County’ and represent existing and future growth centers for population and commerce. As communities strive to revitalize village centers and new development threatens their historical integrity, these historical and cultural centers require special attention in the form of thoughtful land use regulation and preservation efforts.



Inventory of Recreational Resources

The recreational resources map was compiled by volunteers from each town, along with data from RIGIS for boat launches and other activity areas. The North-South trail alignment was provided by The Nature Conservancy. Access points for the Wood-Pawcatuck system were provided by the Wood-Pawcatuck Watershed Association. What is shown here is a simple composite of all the local maps

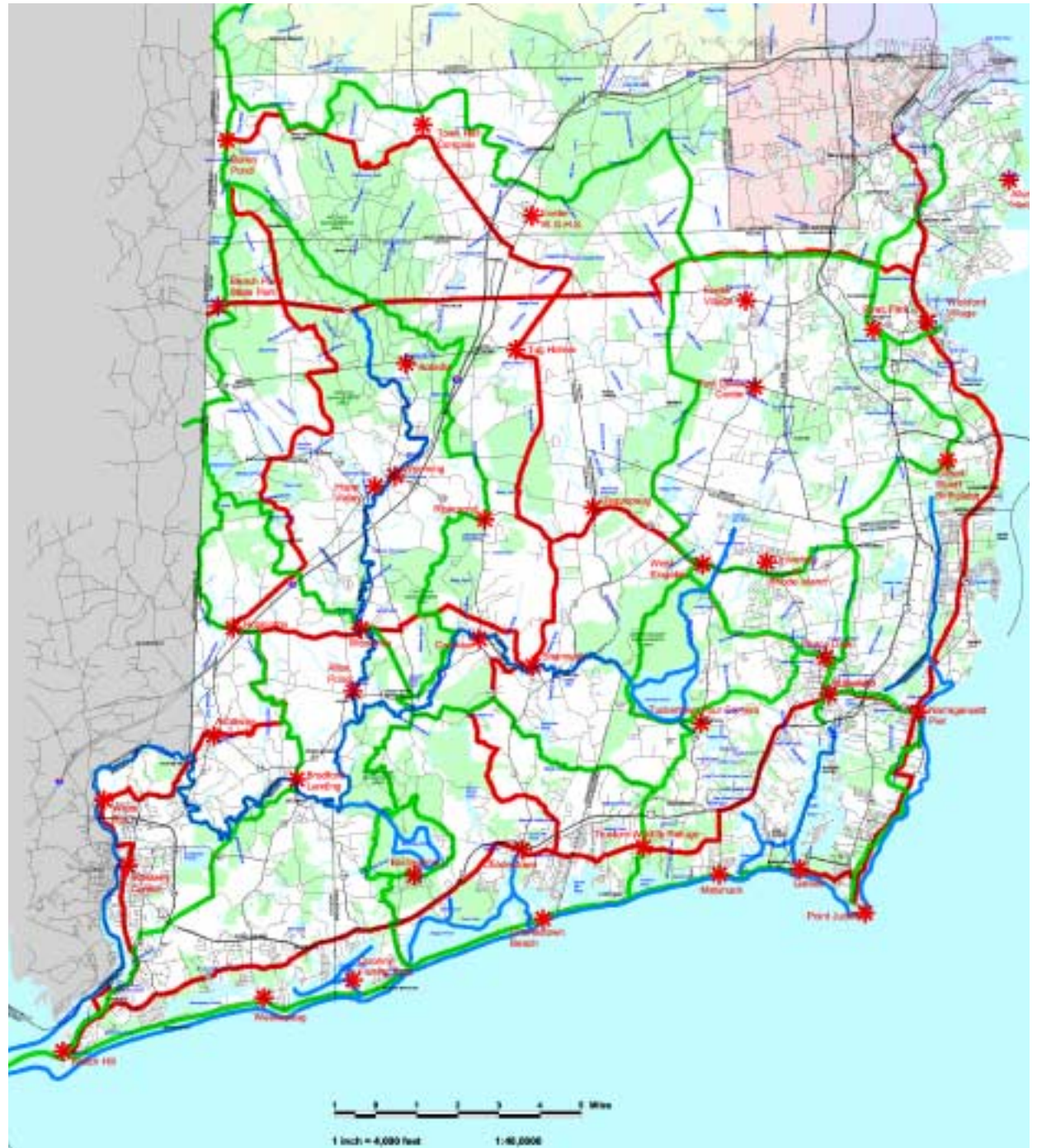
For the purpose of this study, the inventory focussed on trail corridors, and grouped these linear connections into three groups: hiking trails (green), bike routes (red), and water trails (blue). Existing trails or marked routes are shown with a solid line, while proposed connections are dashed. Major and minor destination points were also identified within this system, to illustrate the possibility of trails that link important sites of natural or cultural interest, rest and refreshment, transit or parking centers, etc.



Recreational Resource Priorities

Regional trail priorities were selected in consultation with attendees at the first regional workshop. From the compilation of all possibilities shown on the previous page, regional routes were selected that connect and extend existing trails systems, and provide the best access to natural and cultural resource areas and key destination points. **Hiking trails**, shown in solid green for existing or dashed for proposed, build on the idea of the North-South Trail to connect the four corners of the county. **Bike routes**, shown in red, connect historic village centers with a network of scenic roads and recreational routes. **Water trails** (blue) start with the extensive system identified by the Wood-Pawcatuck Watershed Association, extended with a continuous beach and salt pond route along the coast and another North-South route up Point Judith Pond and the Narrow River.

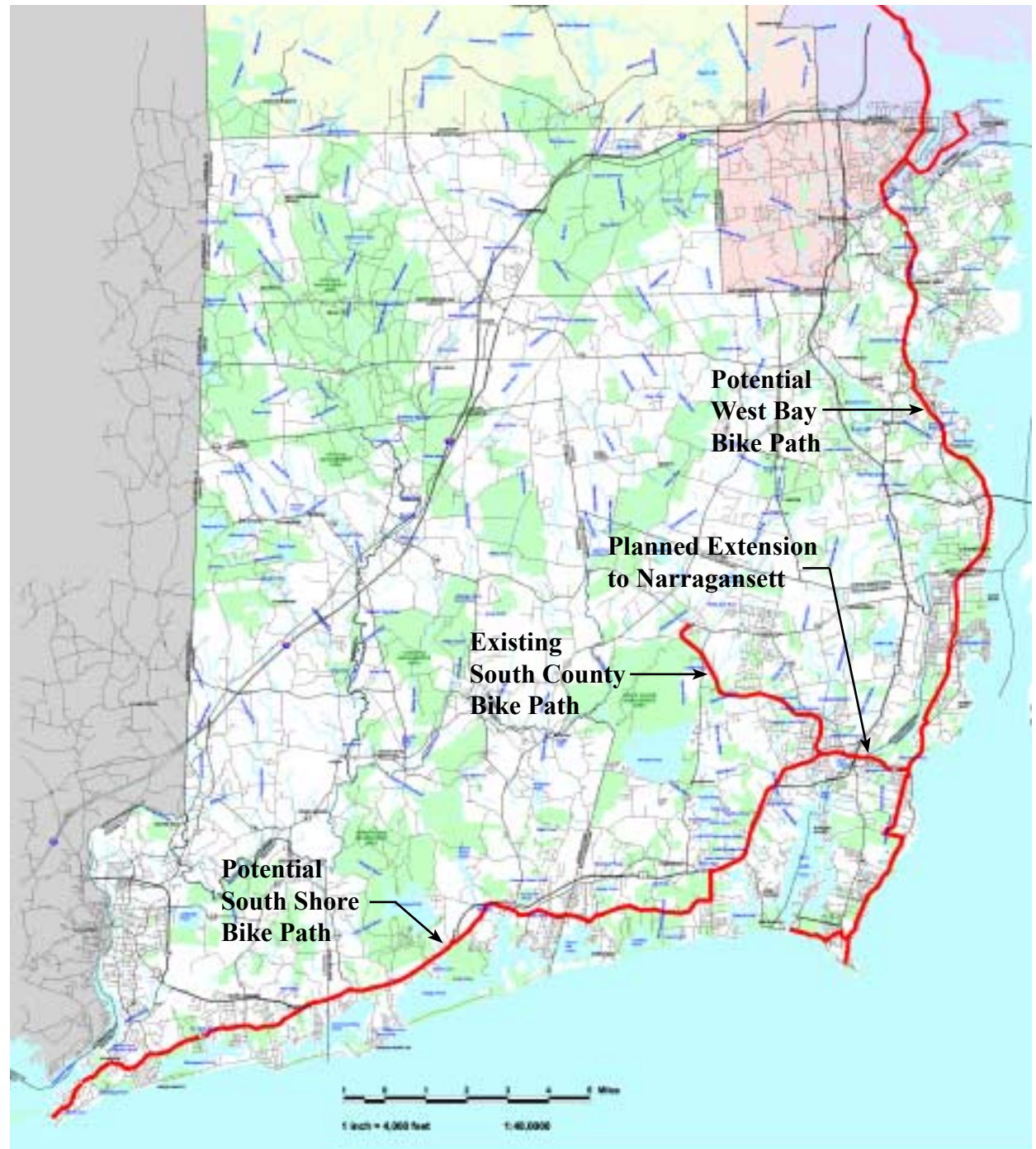
While most of the existing trails are on public conservation land or water bodies, filling the gaps in the proposed network would require additional easements across private lands, acquisition of important parcels, and coordination of access and parking lot development. Many of these elements could be accomplished in conjunction with preservation activities for natural or cultural resources being considered for other reasons.



Targets for Bike Paths and Multi-use Trails

An extensive network of off-road bike paths has been built or planned in northern Rhode Island. There is great potential for a similar network of multi-use trails in South County. Using the Existing South County Bike Path as a starting point, these could extend North and South to connect the historic seaside communities from Westerly through Charlestown to Wakefield, and from Point Judith through Narragansett and Wickford north into East Greenwich, with a potential link to bike paths under construction in Warwick and Coventry. The result would be a boon to local residents, as well as the tourist industry.

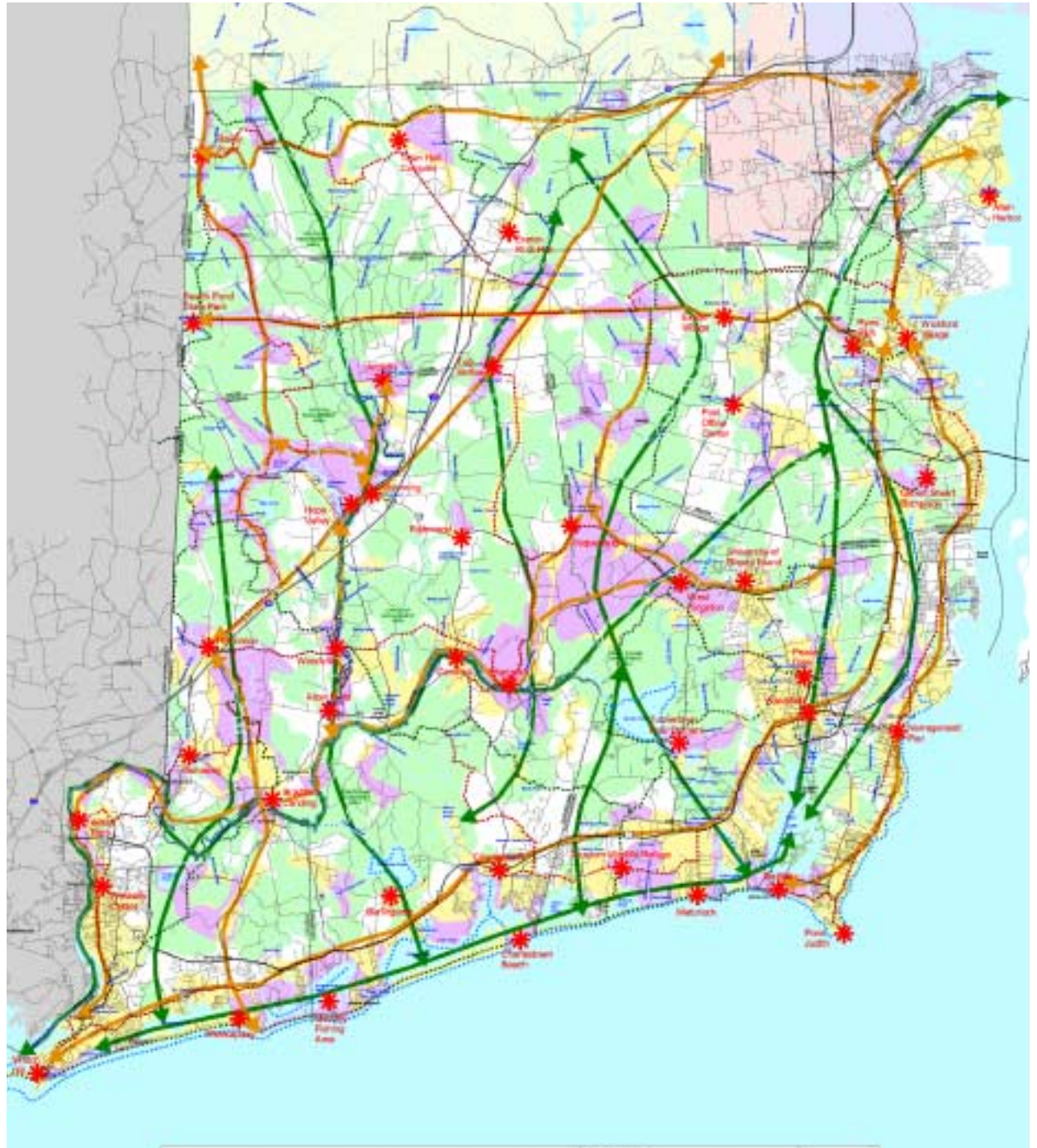
The first target is to initiate planning for a **West Bay Bike Path**, which could use a combination of marked on-street routes and off-road paths to connect Point Judith with Goddard Park in East Greenwich. This trail could possibly use some of the historic route of the Seaview Railroad. A second target is to develop a continuous **South Shore Bike Path** parallel to Route 1 and 1A. This could possibly take advantage of some of the existing right-of-way of Rt. 1, as well as adjacent public land, and use some of the quiet streets along the shore as a temporary route. A final target identified in local and regional meetings is the need for an **overpass across Route 1** at Ninigret or Matunuck. This would allow bicycles and pedestrians to safely access the bike path and routes to the beach from the villages and campgrounds north of Rt. 1.



Composite Resource Priorities

While many groups will continue to base their priorities on a particular mission focus or funding source, one of the goals of this project is to look for areas where Natural, Cultural, and Recreational resources converge. The map at right shows these concentrations of multiple resource types. In light green are the natural resource zones, with dark green arrows showing the natural resource corridors. Important cultural districts are shown in yellow, with cultural corridors in orange. Areas where natural and cultural resources overlap are shown in purple. Finally, recreational hiking, biking, and water trails and destination points are shown.

This map highlights areas and corridors with an unusual concentration of different open space resources: because of the value of these areas to the visual character and quality of life in South County, they should be studied closely as part of an ongoing “landscape preservation plan.” This includes many areas that may have been overlooked in previous conservation efforts: the Chapman Pond-Tomoquag-Canonchet Valley Corridor; the Beaver River Valley; the Usquepaug-West Kingston Agricultural District, and the area between Hope Valley and Arcadia Management Area. Many smaller, but no less important, concentrations occur in each town. Major linking systems which should receive special attention include the Wood-Pawcatuck River and the salt ponds.



Composite Resource Priorities With Protected Land

Comparing the previous map with this map showing land which is already protected (blue cross-hatching) reveals how few of the areas with both cultural as well as natural resource value have been protected. In fact most of the conservation areas and state management lands are entirely natural. While these have immense value for protection of natural habitat and water supplies, South County's historic landscapes and village centers are vulnerable to continued development.

As shown on the following page, using this analysis, the areas with the highest value for multiple resources and recreational opportunities can be readily identified. Some may be so special or sensitive to development that they need to be protected outright. Most however, can be largely preserved with a combination of acquisition, private management, and careful development that respects the existing character of each site and its context. As described in the next section, there are many tools that towns can use to implement this approach. The process of Greenspace mapping and analysis shown here, however, is a critical step in identifying which tools are most appropriate to any given area or parcel of land.

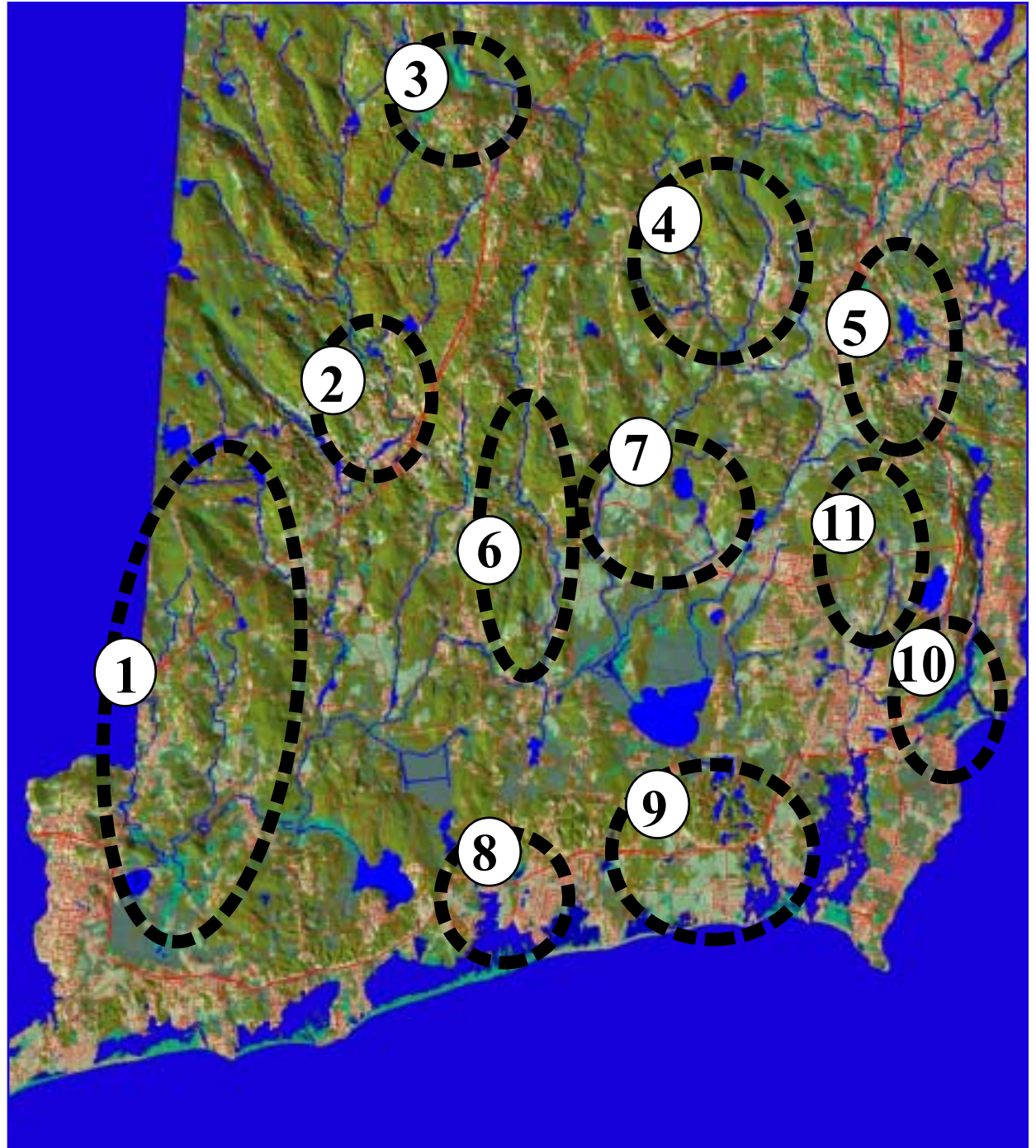


Landscape Preservation Focus Areas

Comparing the areas with a high concentration of the three resource themes to areas that have been preserved reveals that many of these “Living Museums of the South County Landscape” have been overlooked in previous conservation efforts. As shown at right, these include eleven key areas:

1. Chapman Pond-Tomoquag-Canonchet Valley
2. Hope Valley/Arcadia
3. West Greenwich/Nooseneck
4. Exeter/Queen River
5. Belleville/North Kingstown
6. Beaver River Valley
7. Usquepaug-West Kingston
8. Charlestown/Ninigret Pond
9. Perryville/Matunuck
10. Narragansett/Pettaquamscutt
11. Upper Saugatucket

Further study of these focus areas will reveal many opportunities to combine conservation of sensitive natural resources with protection of historic sites and landscapes. Rich opportunities for recreational development also exist, including providing access to special natural and cultural sites, and building trails for recreation and historical interpretation. At the same time, growth can continue within each area -- but that growth should be focused on revitalized village centers and carefully-planned development in the surrounding countryside.



South County Greenspace Protection Strategy